## **Guide to Creating FGDC Compliant Metadata** with the EPA Metadata Editor v3.2

## **SEPA** Metadata Editor





#### **November 8, 2013**

Please note these instructions are part of best practices and guidance, not FWS official policy. Please contact US Fish and Wildlife Service, HQ Information Resources and Technology Management, Geospatial and Data Services Team, <a href="mailto:fwsgis@fws.gov">fwsgis@fws.gov</a> for more information.

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#### 1. Notes

- a. This guide presumes that the EPA Metadata Editor is installed.
- b. You can find training materials and download the application from: https://edg.epa.gov/EME/

(Some users have experienced problems downloading the EPA Metadata Editor with Internet Explorer. If you are unable to open the zip file, try Downloading it with Chrome.)

- c. You will be asked to fill out a brief questionnaire. Select EME 3.2
- d. Mandatory elements are highlighted in (ed) when space allows.
- e. It is possible, and recommended, to copy and paste values from reports and publications into text fields.
- f. Creating good Metadata makes one strong, virtuous and attractive.

# 2. Assembling the information needed to create good Metadata

- a. Contact information for the organization that created the dataset – Address, Phone Number, Title and E-mail.
- b. Contact information for the organization that is creating the Metadata.
- c. Contact information for the organization that will distribute the dataset.
- d. Find an appropriate liability statement for the dataset.
- e. List any source materials used in creating the dataset.
- f. List the process steps taken in creating the dataset.
- g. List any source materials used in attributing the dataset.
- h. Calculate the size of the dataset when compressed.
- If possible, determine the URL where a zip file of the data set will be accessible for download.

The EPA Metadata Editor, EME, uses an Access Database to store commonly used values for many metadata elements, such as publisher and contact information.

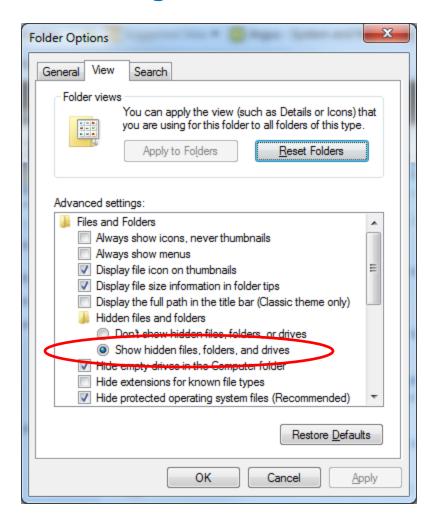
A U.S. Fish and Wildlife version of this database should be installed at **C:\metadata\_fws** (metadata\_fws.mdb).

If it has not already been installed, create the new folder **C:\metadata\_fws**.

Download metadata\_fws.mdb and config.xml from:

https://fishnet.fws.doi.net/projects/gisnew/gisinfo/SitePages/Metadata.aspx

(Open the pulldown menu to the right of the file name, select **Send To > Download a Copy** 



Config.xml defines the path to the database for the metadata editor and is necessary to use and edit the FWS metadata database.

You will need to view hidden files on your computer in order to place this file in the proper location.

To show hidden files click **Start** and then **Help and Support** 

Type Show hidden files in the search window Click on **Show hidden files**Click to open **Folder Options** and open the **View** tab.

Under Hidden files and folders, click the Show hidden files, folders and drives radial button.

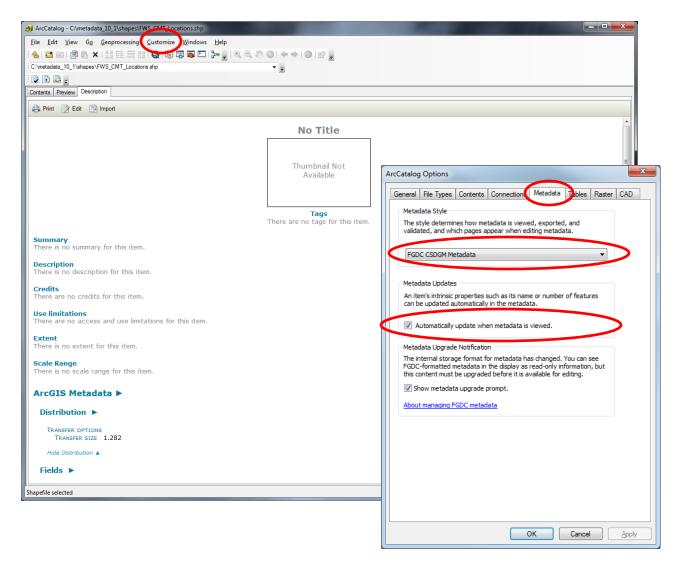
There will be a default copy of config.xml placed in C:\Users\<your user name>\AppData\Roaming\Innovate! Inc\ EPA Metadata Editor v3.2

Replace that copy of config.xml with the copy located at C:\metadata\_fws

This step should be performed for each GIS user who logs onto a shared computer so that they can use the metadata database.

<your user name> is your short form Active Directory name.
For example, Joe\_Schmoe@fws.gov might be jschmoe. It should be apparent when you view the Users directory.

## 4. Selecting FGDC CSDGM Style Metadata



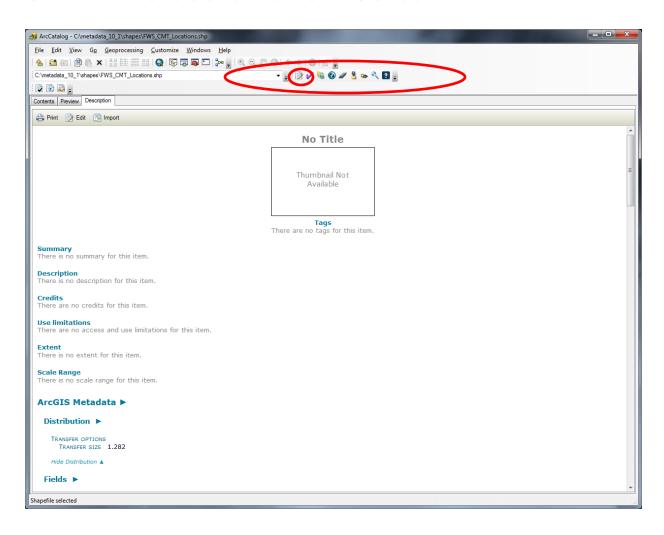
Click on Customize

Select the **Metadata**Tab in **ArcCatalog Options** 

Select **FGDC CSDGM Metadata** from the pulldown menu

When the Automatic update box is checked ArcCatalog will automatically detect attributes.

### 5. EPA Metadata Editor Toolbar



Click on **Customize** 

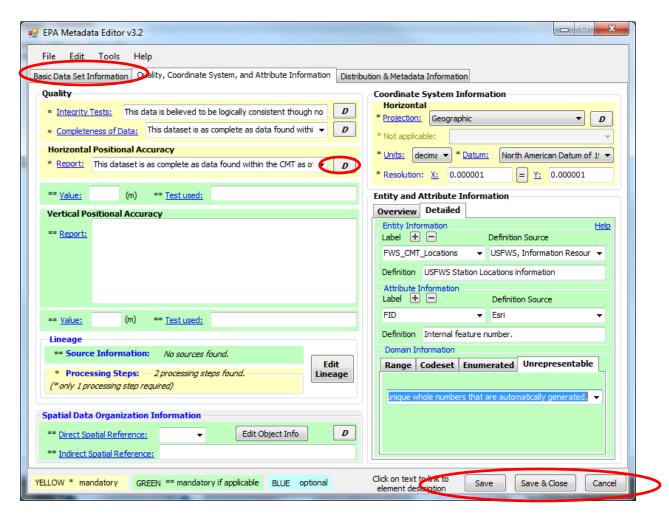
Choose **Toolbars** and check **EPA Metadata Editor** 

This activates the **EPA Metadata Editor** tools
In ArcCatalog

To use the **EPA Metadata Editor** click
on the **Edit** button

**EPA Metadata Editor** will open in another window

#### 6. Basic Data Set Information



The first tab is **Basic Data Set Information** 

Yellow fields are mandatory

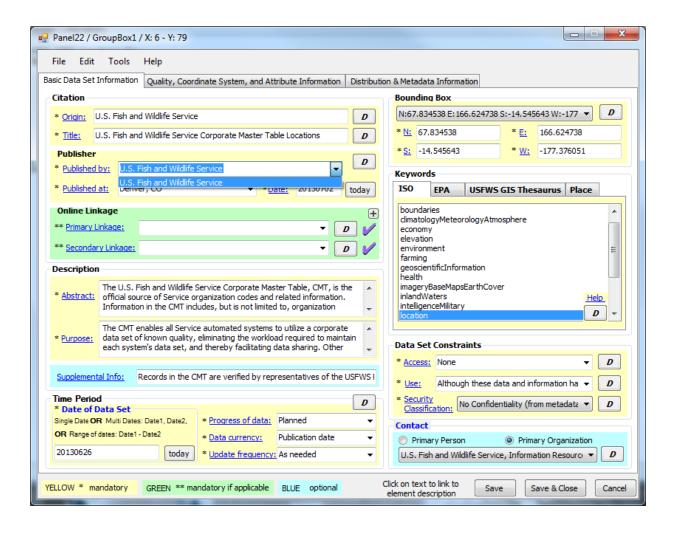
Green fields are mandatory if applicable

Blue fields are **optional** 

Buttons to **Save**, **Save & Close** and **Cancel** are at the bottom right of the window

Buttons with a **D** apply default values. These are **not** applicable to FWS data sets

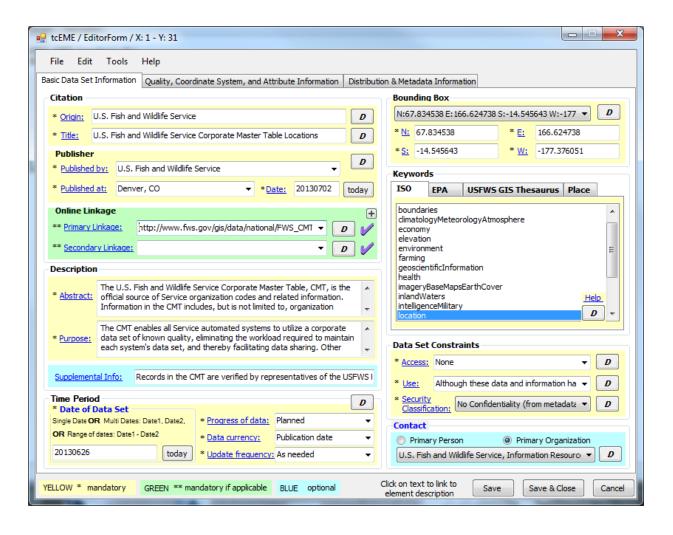
#### 6. Basic Data Set Information



Type values into the fields

Many fields have pulldown menus, eg. **Published at:**, which provide a choice of acceptable values

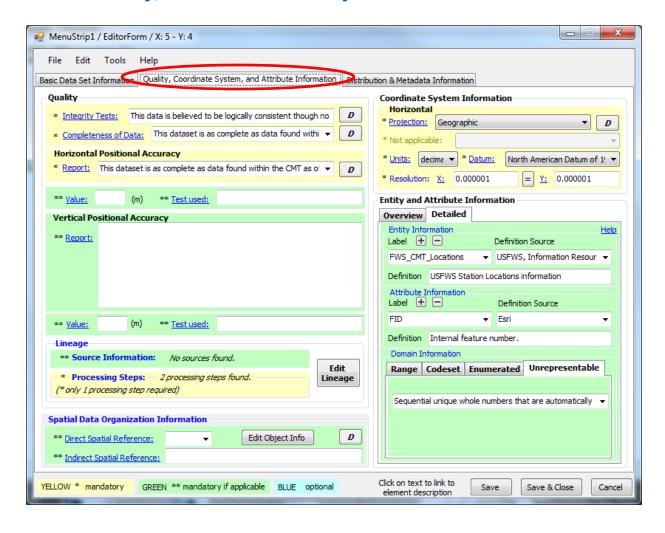
#### 6. Basic Data Set Information



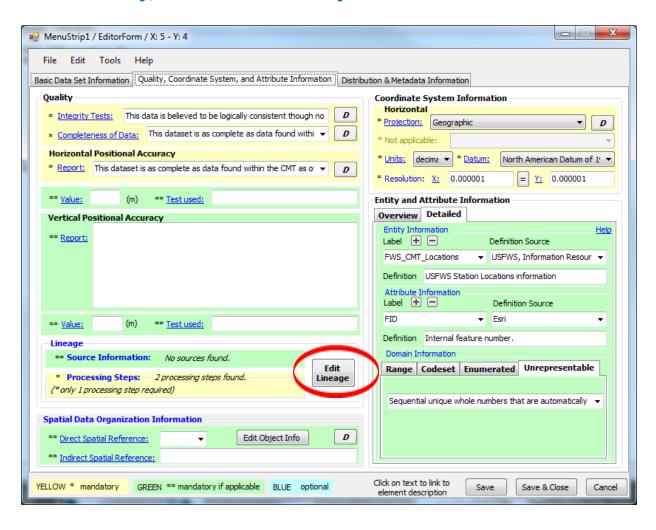
You can copy and paste into text fields like **Abstract** and **Purpose** 

This can be a great labor saver and ensure that these fields are correct.

It is a good idea to spend some time composing the **Abstract**, **Purpose** and **Supplemental Info** as these provide the user of your data with the best idea of how best to use it.

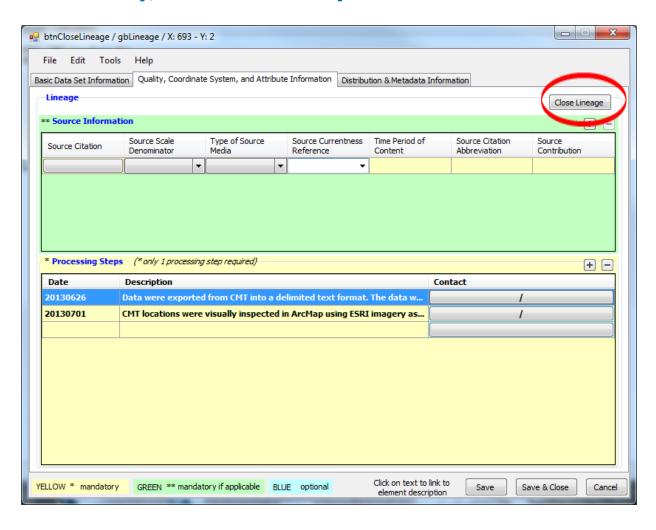


The second tab contains Quality,
Coordinate System and Attribute Information



If you have not performed formal tests on your spatial data you can enter the default values.

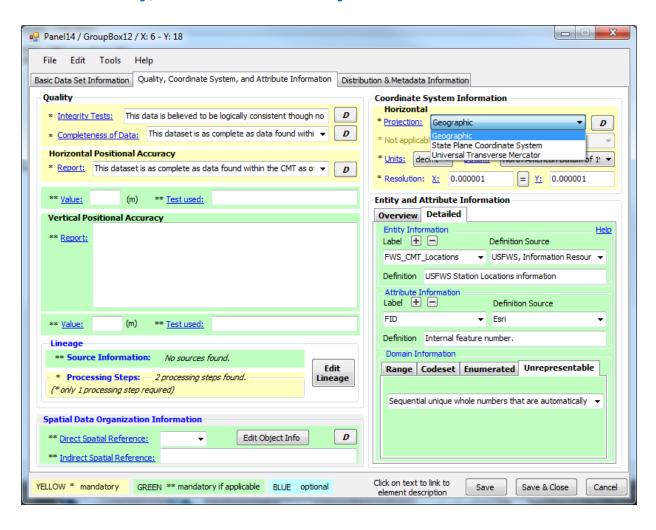
Push the **Edit Lineage** button to open the **Lineage** and **Processing Steps** window.



When finished, click the **Close Lineage** button.

If the geospatial data is compiled, derived or calculated from pre-existing data, the source(s) should be listed in the Lineage. Original data collection methodologies should be explained in the Abstract and Supplimental Information sections.

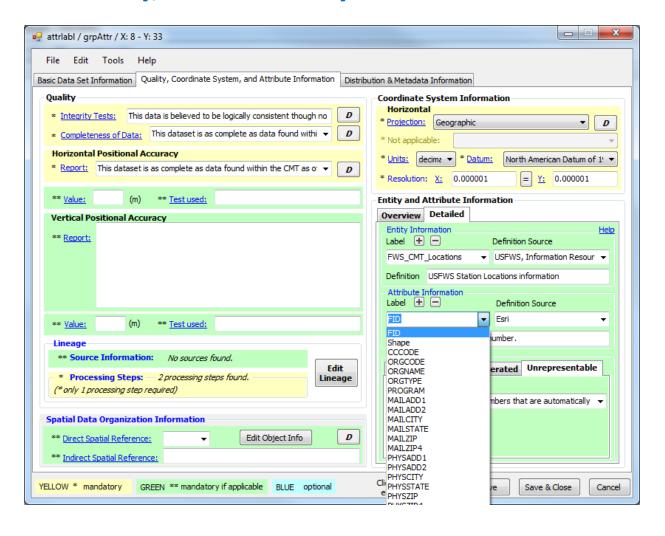
In **Processing Steps**enter a brief summary
of the steps followed to
create the data set.
It is not necessary to
document each individual
operation unless unusual
methods were utilized or
complex modeling was
involved.



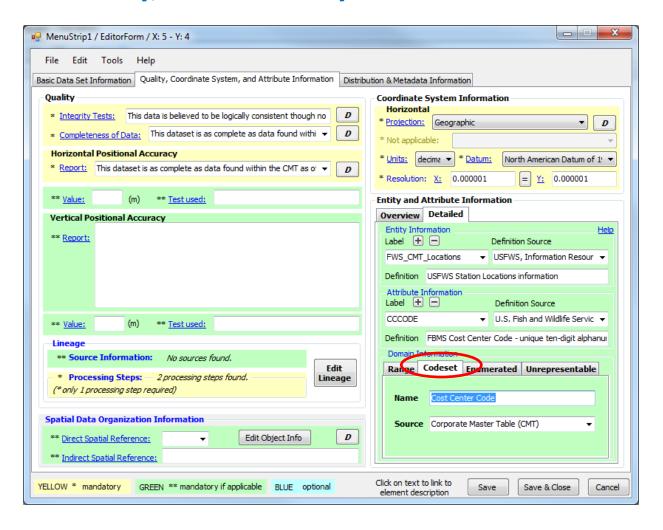
Currently the EPA
Metadata Editor only
supports State Plane,
UTM and geographic
projections.

Select Projection from the **Projection** pull down menu.

Select **Units** and **Datum** from the appropriate pull down menus.



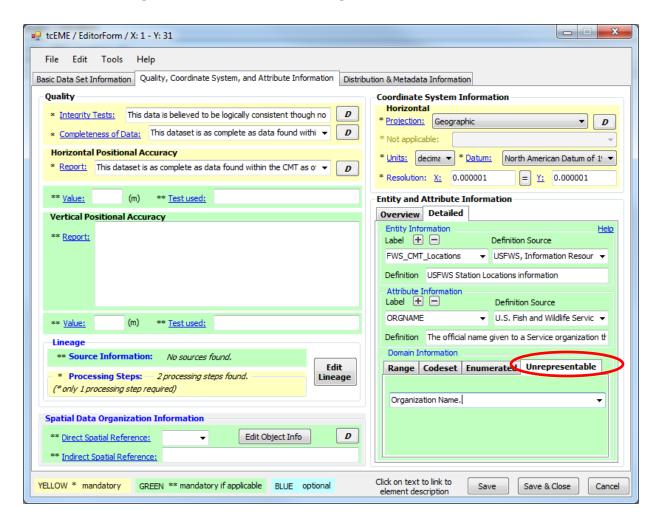
Individual attributes are found in the pulldown menu under **Attribute Information.** 



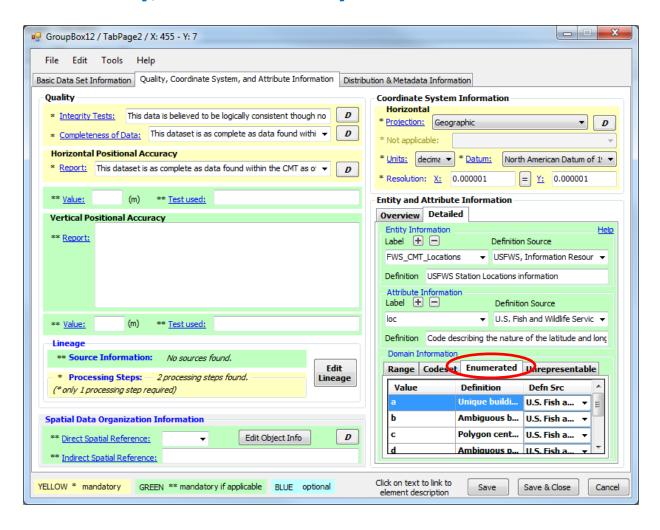
Each attribute should be defined and characterized. There Is a choice of Range, Codeset, Enumerated And Unrepresentable Domains.

A **Range** domain is appropriate for continuous numeric data like elevation or temperature.

Defining a **Codeset** of values is appropriate when the values reside within a well-defined domain, such as the **Cost Center Code** illustrated here.

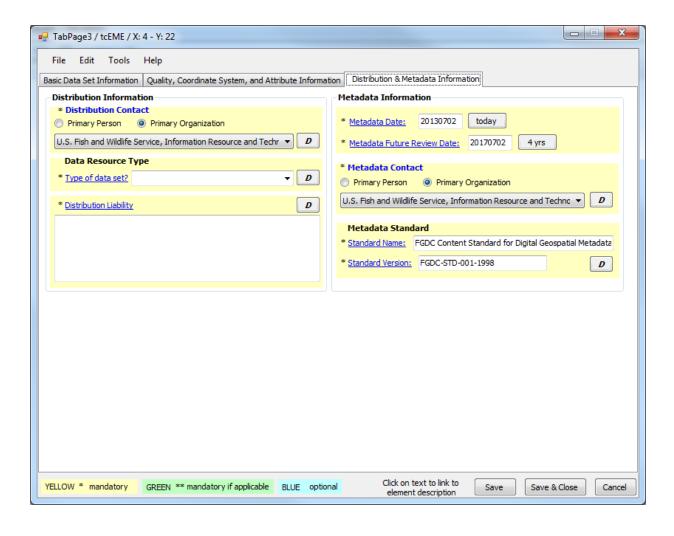


An **Unrepresentable Domain** is appropriate for free text attributes.

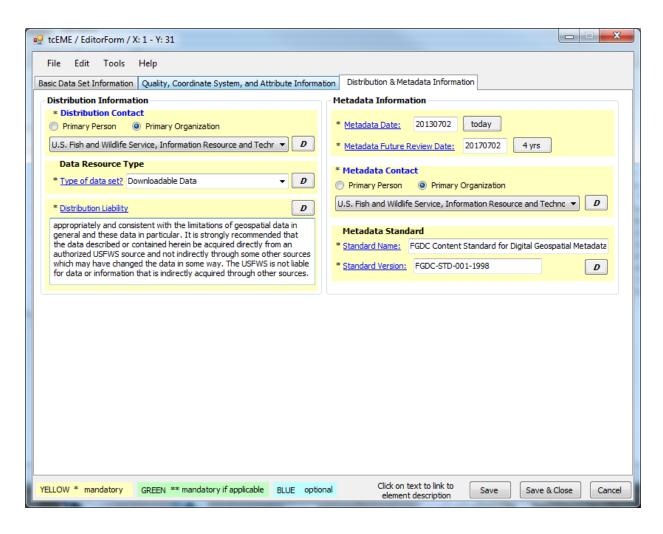


An **Enumerated Domain** is appropriate for coded values that do not reside within a formally defined domain.

Here, a location code
With a domain of five
possible values is
defined as an
Enumerated Domain
With an explicit
definition of each value.



The third tab contains **Distribution & Metadata Information.** 

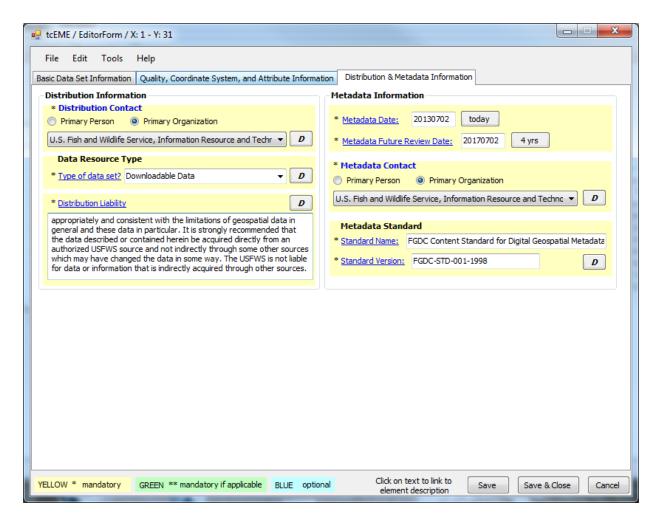


Contact Information is populated using pulldown menus.

The information in these menus can be modified in the database, discussed in section x. FWS best Practice is to use **Primary Organization** in the Contacts Information.

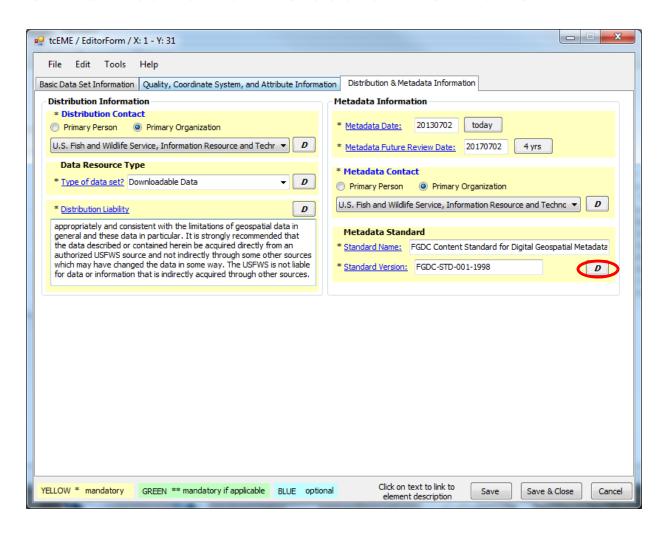
Use the **Default** button for **Metadata Standard**.

A known issue exists with **Metadata Future Review Date**, even though a review may not be planned or anticipated, a date must be entered. EPA uses a default of 4 years.



The **Distribution Liability** for geospatial data published by the U.S. Fish and Wildlife Service is generally the same as the **Use Liability** and can be copied and pasted.

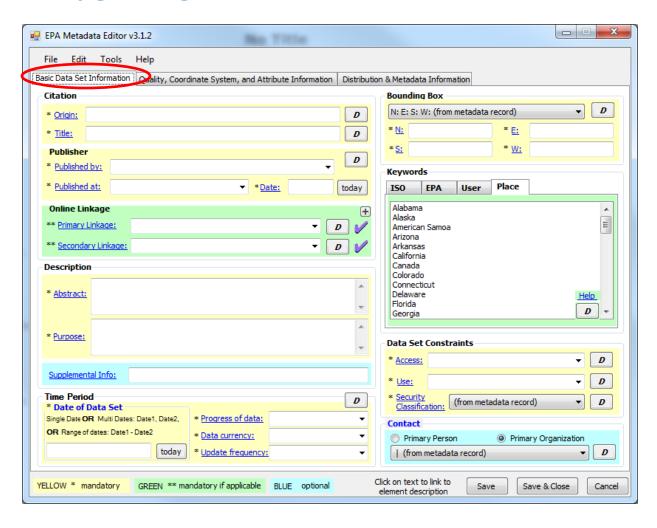
A known issue exists with **Metadata Future Review Date**, even though a review may not be planned or anticipated, a date must be entered. EPA uses a default of 4 years.



Contact Information is populated using pulldown menus.

The information in these menus can be modified in the database, discussed in section x. FWS best Practice is to use **Primary Organization** in the Contacts Information.

## 9. Upgrading Metadata - Overview

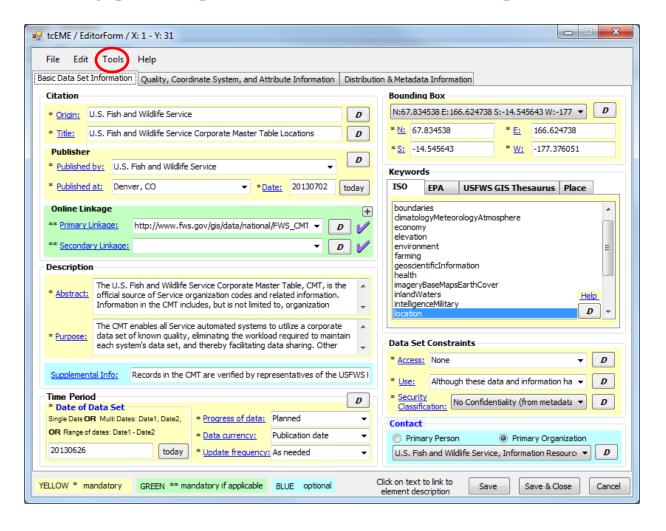


When the metadata created in the EPA Metadata Editor is viewed in ArcCatalog, most of the information is not yet visible.

It is necessary to **upgrade** the metadata to ArcGIS format for users of ArcMap and ArcCatalog to view the metadata.

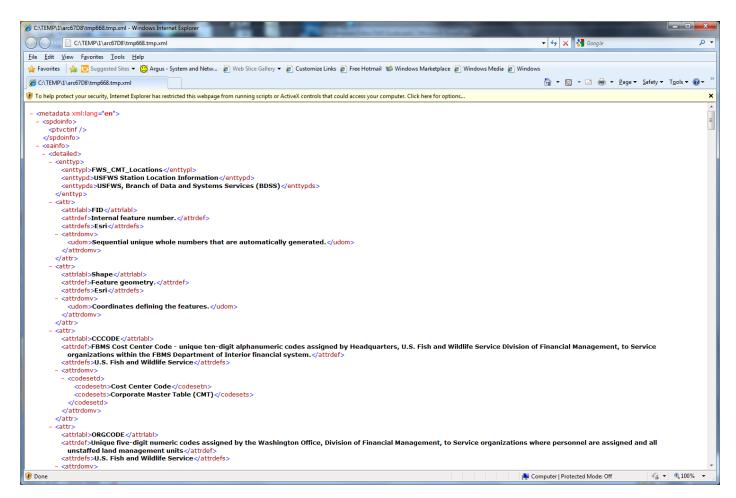
Because of differences
In the standards (FGDC,
ISO and ESRI-ISO),
sometimes information
can be lost in translation.
It is important to finish
all edits in EME and save
a backup before
upgrading.

## 10. Upgrading Metadata – Reviewing XML

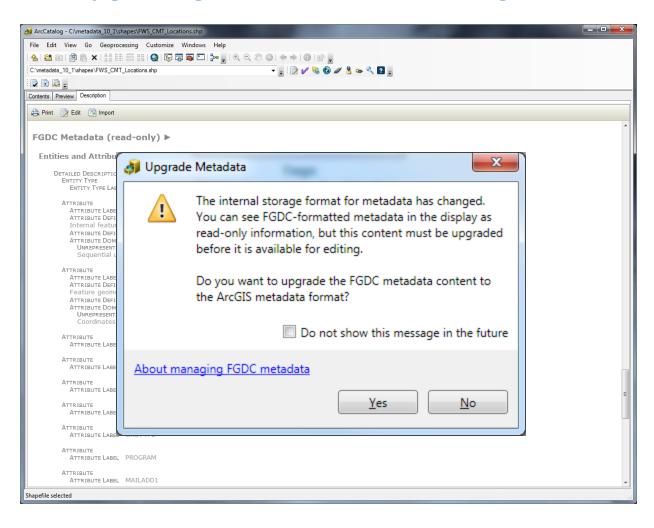


To view the xml output of your metadata, select **View Metadata XML** from the **Tools** pulldown menu.

## 10. Upgrading Metadata – Reviewing XML

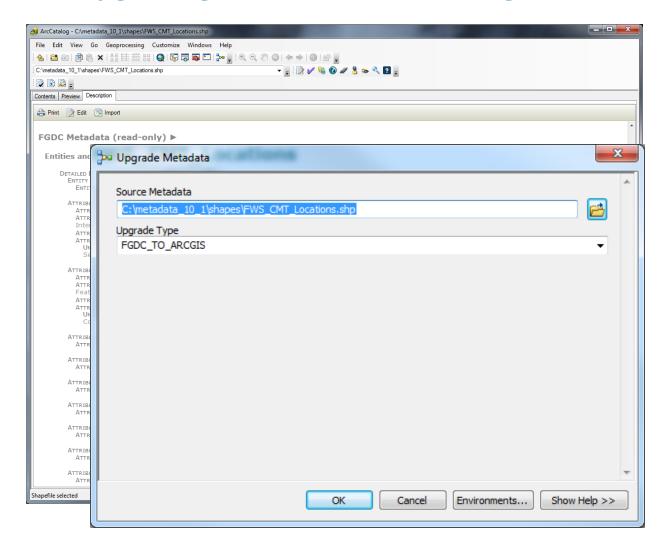


Although XML may not be familiar to you, you can scroll down through the file and examine the information that you added. There may be a lot of stuff that appears extraneous, you can ignore it for now, it is ESRI and ISO metadata information.

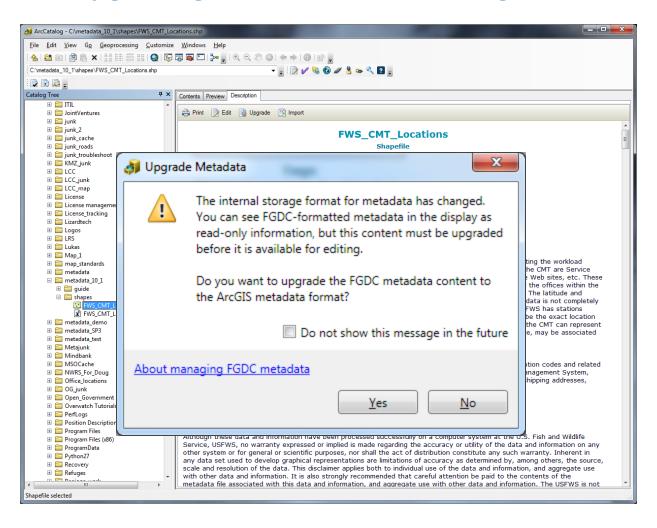


When the metadata created in the EPA Metadata Editor (EME) is opened in ArcCatalog, a popup appears prompting you to upgrade your metadata.

If you have finished Editing your metadata In EME, press **Yes**.

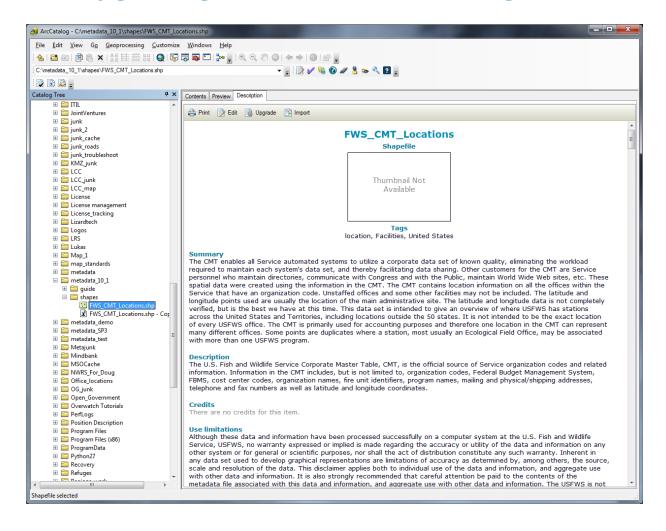


When you click **Yes** a dialog will open, select **FGDC\_TO\_ARCGIS** from the **Upgrade Type** pulldown.

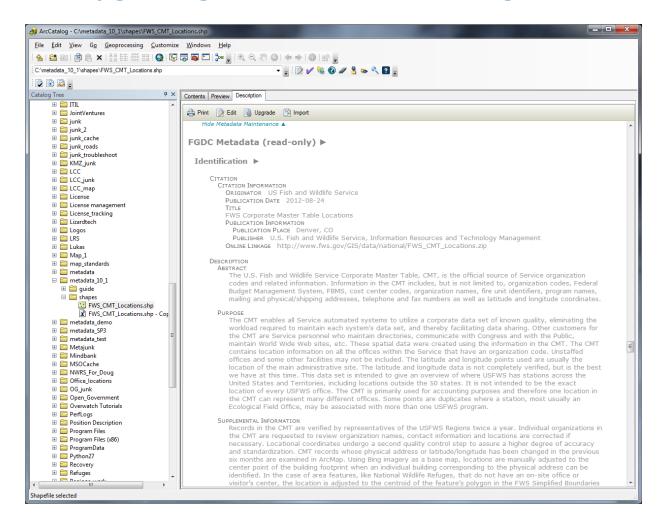


When you open your metadata again in ArcCatalog, the **Upgrade Metadata** popup will appear again. Press **No** This time.

Very often, if you press Yes this time, the upgrade routine will fail.

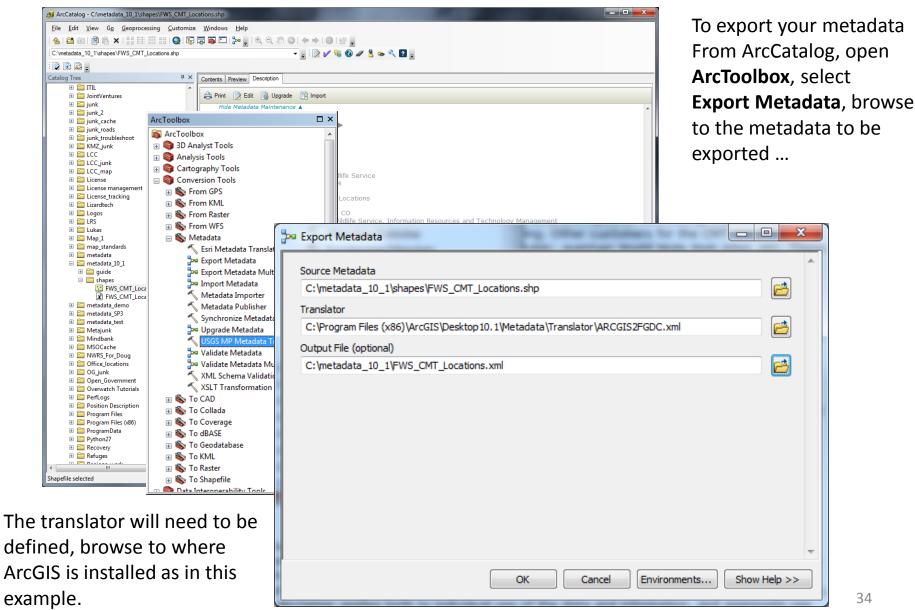


After upgrading your metadata it will appear Correctly in the ArcCatalog and ArcMap **Description** tab ...

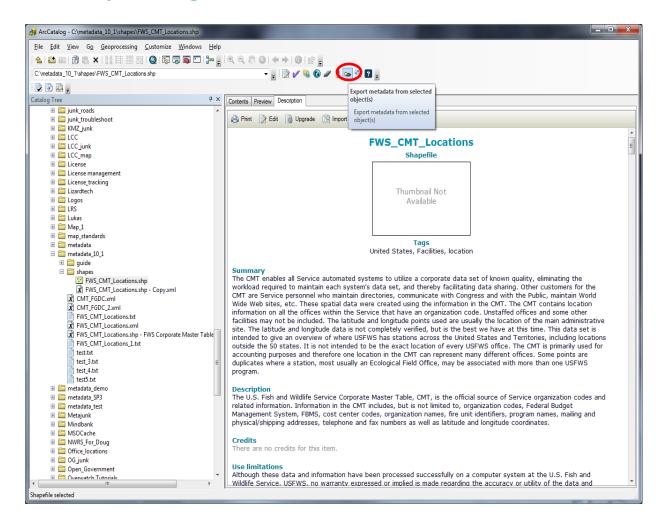


... as well as in the FGDC Metadata section.

## 12. Exporting Metadata - ArcCatalog

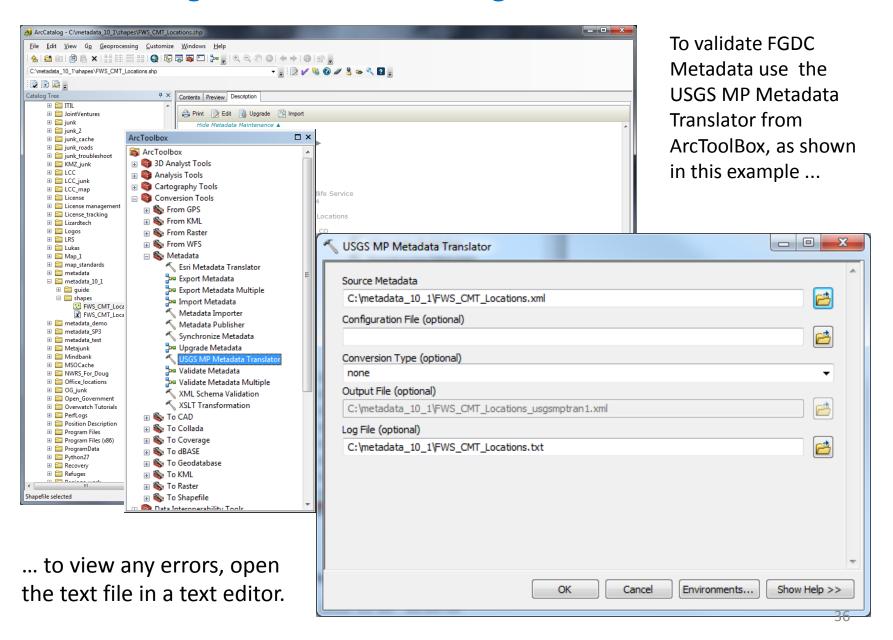


## 13. Exporting Metadata - EME

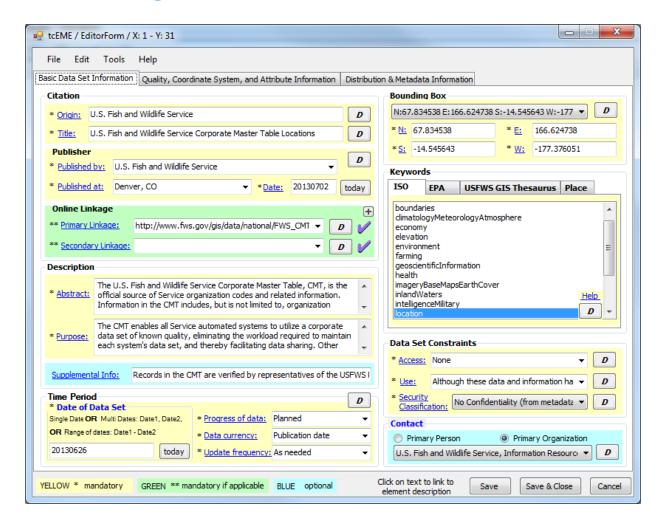


To export an FGDC xml metadata file from EME select Export Metadata from selected object(s) from the EME toolbar in ArcCatalog.

## 14. Validating Metadata - ArcCatalog



## 15. Editing the Metadata Database

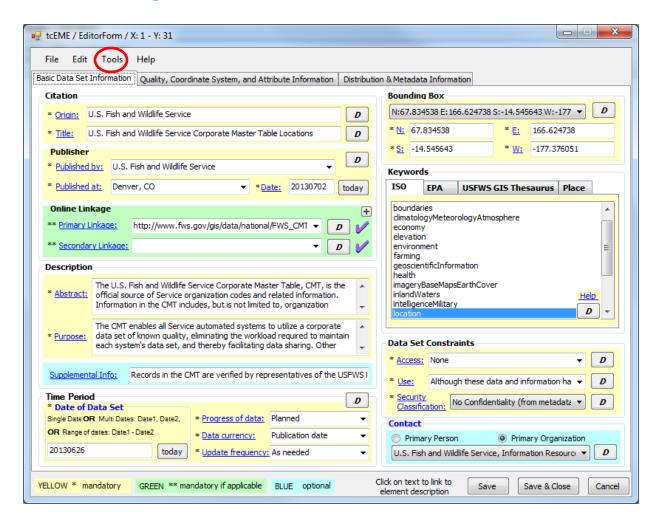


Most of the metadata information values that EME allows the user to select from pulldown menus, or, that EME offers as defaults can be edited in the metadata database.

This can be very helpful if you have many data sets to document or if your office publishes data sets regularly.

Commonly used values Can be inserted into the Interface, saving time and preventing typographical errors.

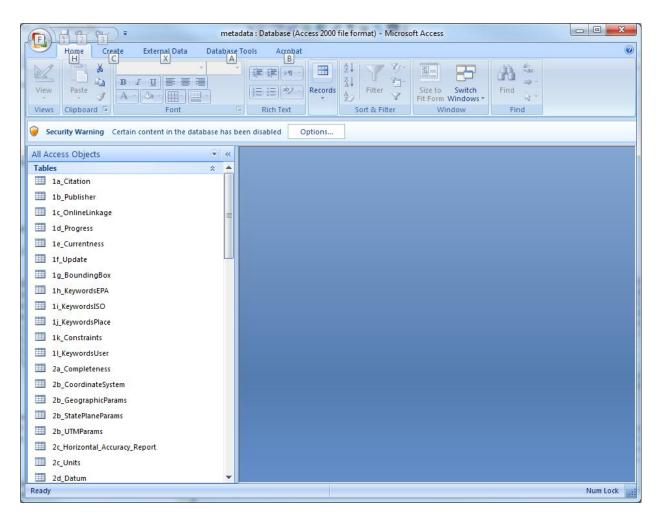
## 15. Editing the Metadata Database



To edit the EME database, select

Open Database from the Tools pulldown menu. The database will open in Microsoft Access.

You cannot edit the database by opening it in Access, you **MUST** open using the **Open Database** tool in EME. Otherwise, your edits will not be recognized by EME.



Items that can be edited include:

Citation

**Publisher** 

OnlineLinkage.

KeywordsPlace

**Constraints** 

KeywordsUser

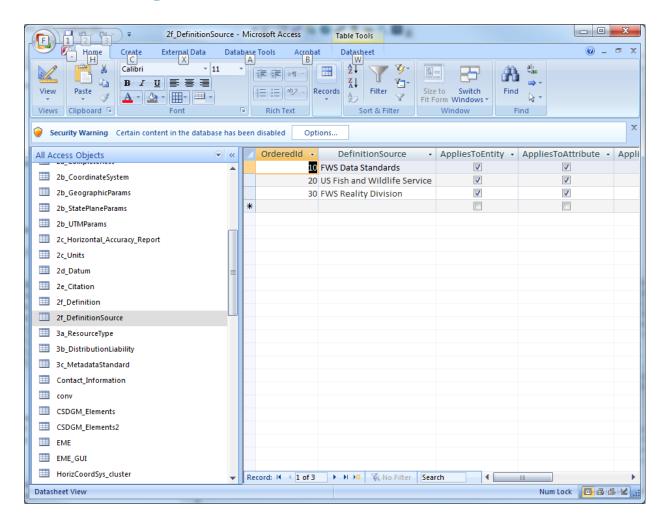
Citation

Definition

DefinitionSource

DistributionLiability

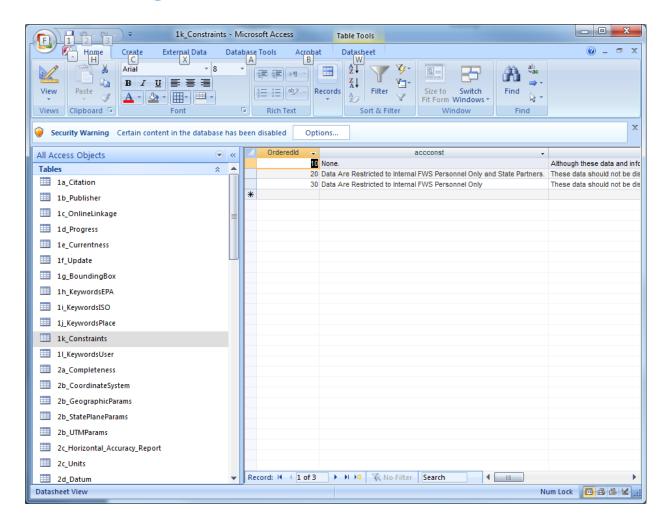
You cannot edit the database by opening it directly in Access, you **MUST** open it using the **Open Database** tool in EME. Otherwise, your edits will not be recognized by EME.



In this example,
DefinitionSource,
values available for the
pulldown menu to
populate **Definition Source** in the attribute
section are modified
for FWS use.

Checking the boxes designates whether this option will be available for Entity, Attribute or values in an Enumerated Domain.

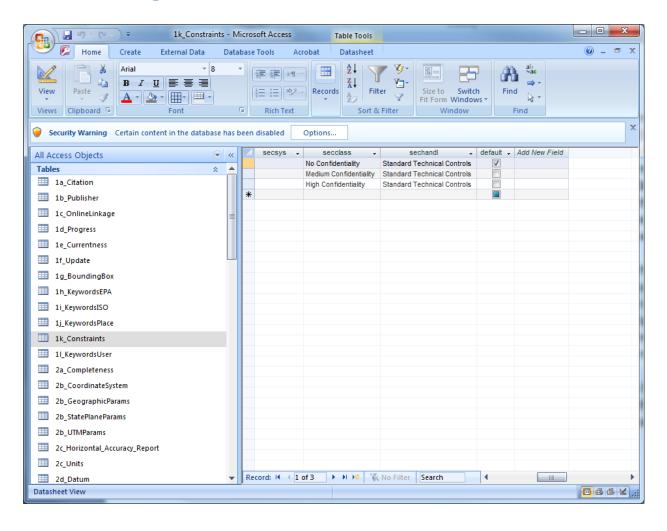
When you have completed your edits, save in Access.



In this example,
Constraints, values
available for the
pulldown menu to
populate **Data Set Constraints** in the
Basic Data Set
Information section
are modified
for FWS use.

This table includes values for Access, Use and Distribution Constraints.

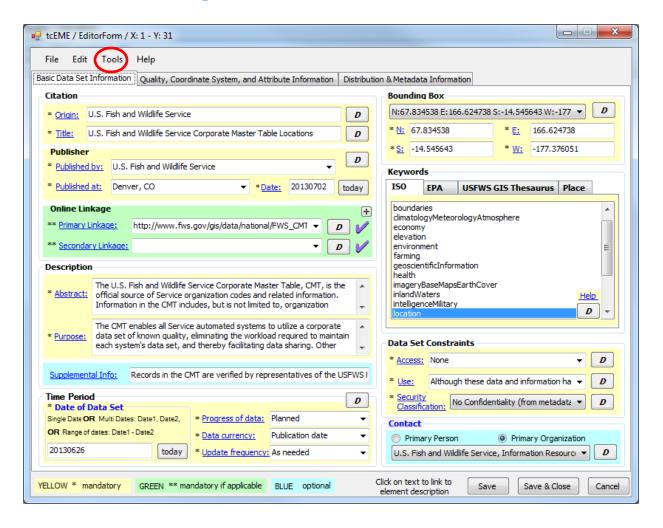
To set a value as a Default, scroll to the right at the bottom ...



... and place a check in the **default** box.

This will be the value that is entered when the **Default** button is pushed.

## 17. Refreshing the Metadata Database



To view your edits
Within EME, select
Refresh Database from
the Tools pulldown
menu. The new values
will now be available
from the pulldown
menus and Default
buttons.

## 18. Customizing the Database for Specific Stations and Offices

The metadata database, metadata\_fws.mdb, located at C:\metadata\_fws, can be shared among colleagues by copying and pasting the database to the same path location on the coworker's computer.

Common values, such as publisher, originator or contacts can be standardized by sharing the database. These values can be defined as defaults in the database, making it easier for users to populate metadata elements.

For geospatial data series you may want to create a metadata template that users can import into ArcCatalog and then edit as needed in EME.